Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2007-18

Iowa, Chicago & Eastern RR Corp. (ICE)
Excelsior Spring, Missouri
April 8, 2007

Note that 49 U.S.C. §20903 provides that no part of an accident or incident report made by the Secretary of Transportation/Federal Railroad Administration under 49 U.S.C. §20902 may be used in a civil action for damages resulting from a matter mentioned in the report.

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2007-18

1.Name of Railroad Operating Train #1: Iowa Chicago and Eastern RR Corp. [ICE]	1a. Alphabetic Code: ICE	1b. Railroad Accident/Incident No.: 2007112
2.Name of Railroad Operating Train #2: N/A	2a. Alphabetic Code: N/A	2b. Railroad Accident/Incident No.: N/A
3.Name of Railroad Operating Train #3: N/A	3a. Alphabetic Code: N/A	3b. Railroad Accident/Incident No.: N/A
4.Name of Railroad Responsible for Track Maintenance: Iowa Chicago and Eastern RR Corp. [ICE]	4a. Alphabetic Code: ICE	4b. Railroad Accident/Incident No.: 2007112
5. U.S. DOT_AAR Grade Crossing Identification Number: 375434Y	6. Date of Accident/Incident: Month 04 Day 08 Year 2007	7. Time of Accident/Incident: 05:01: ☐ AM ☑ PM

8. Type of Accident/Indicent *(single entry in code box)*: 1. Derailment; 2. Head on collision; 3. Rear end collision; 4. Side collision; 5. Raking collision; 6. Broken Train collision; 7. Hwy-rail crossing; 8. RR grade crossing; 9. Obstruction; 10. Explosion-detonation; 11. Fire/violent rupture; 12. Other impacts; 13. Other *(describe in narrative)* — Code: 07

9. Cars Carrying HAZMAT	10. HAZMAT Cars Damaged/Derailed	11. Cars Releasing HAZMAT	12. People Evacuated	13. Division
0	N/A	N/A	0	System

14. Nearest City/Town	15. Milepost *(to nearest tenth)*	16. State Abbr	Code	17. County
Excelsior Springs	478.7	N/A	MO	CLAY

18. Temperature (F) *(specify if minus)*	19. Visibility *(single entry)* 1. Dawn 2. Day 3.Dusk 4.Dark — Code	20. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5.Sleet 6.Snow — Code	21. Type of Track 1. Main 2. Yard 3. Siding 4. Industry — Code
42 F	2	1	1

22. Track Name/Number	23. FRA Track Class (1-9, X) — Code	24. Annual Track Density *(gross tons in millions)*	25. Time Table Direction 1. North 2. South 3. East 4. West — Code
Main Track No 2	3	8.5	2

OPERATING TRAIN #1

26. Type of Equipment Consist *(single entry)* 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/switching 8. Light loco(s). 9. Maint./inspect.car; A. Spec. MoW Equip. — Code	27. Was Equipment Attended? 1. Yes 2. No — Code	28. Train Number/Symbol
1	1	FMCKC07

29. Speed *(recorded speed, if available)* — Code: R - Recorded; E - Estimated: 38 MPH | R

30. Trailing Tons *(gross tonnage, excluding power units)*: 12905

31. Method(s) of Operation *(enter code(s) that apply)*: a. ATCS; b. Auto train control; c. Auto train stop; d. Cab; e. Traffic; f. Interlocking; g. Automatic block; h. Current of traffic; i. Time table/train orders; j.Track warrant control; k. Direct traffic control; l.Yard limits; m.Special instructions; n. Other than main track; o. Positive train control; p. Other *(Specify in narrative)*

Code(s): e | N/A | N/A | N/A | N/A

31a. Remotely Controlled Locomotive? 0 = Not a remotely controlled; 1 = Remote control portable; 2 = Remote control tower; 3 = Remote control transmitter - more than one remote control transmitter: 0

32. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	DME 6052	1	N/A
(2) Causing *(if mechanical cause reported)*	0	0	N/A

33. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
N/A	N/A

34. Was this consist transporting passengers? (Y/N): N

35. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote
(1) Total in Train	4	0	0	0	0
(2) Total Derailed	0	0	0	0	0

36. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	100	0	0	0	0
(2) Total Derailed	0	0	0	0	0

37. Equipment Damage — This Consist: $0.00

38. Track, Signal, Way, & Structure Damage: $2,438.00

39. Primary Cause Code: M302

40. Contributing Cause Code: N/A

Number of Crew Members

41. Engineer/ Operators	42. Firemen	43. Conductors	44. Brakemen
1	0	1	0

Length of Time on Duty

45. Engineer/Operator: Hrs 6 Mi 48

46. Conductor: Hrs 6 Mi 48

Casualties to:	47. Railroad Employees	48. Train Passengers	49. Other
Fatal	0	0	3
Nonfatal	0	0	0

50. EOT Device? 1. Yes 2. No: 1

51. Was EOT Device Properly Armed? 1. Yes 2. No: 1

52. Caboose Occupied by Crew? 1. Yes 2. No: N/A

OPERATING TRAIN #2

53. Type of Equipment Consist *(single entry)* 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/switching 8. Light loco(s). 9. Maint./inspect.car; A. Spec. MoW Equip. — Code	54. Was Equipment Attended? 1. Yes 2. No — Code	55. Train Number/Symbol
N/A	N/A	N/A

56. Speed *(recorded speed, if available)* — Code: R - Recorded; E - Estimated: N/A MPH | N/A

58. Method(s) of Operation *(enter code(s) that apply)*: a. ATCS; b. Auto train control; g. Automatic block; h. Current of traffic; m.Special instructions; n. Other than main track

58a. Remotely Controlled Locomotive? 0 = Not a remotely controlled; 1 = Remote control portable

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57. Trailing Tons *(gross tonnage, excluding power units)* N/A

c. Auto train stop
d. Cab
e. Traffic
f. Interlocking
i. Time table/train orders
j.Track warrant control
k. Direct traffic control
l.Yard limits
o. Positive train control
p. Other *(Specify in narrative)*
Code(s) N/A N/A N/A N/A N/A

2 = Remote control tower
3 = Remote control transmitter - more than one remote control transmitter N/A

59. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	N/A	N/A	N/A
(2) Causing *(if mechanical cause reported)*	N/A	N/A	N/A

60. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
N/A	N/A

61. Was this consist transporting passengers? (Y/N) N/A

62. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote
(1) Total in Train	N/A	N/A	N/A	N/A	N/A
(2) Total Derailed	N/A	N/A	N/A	N/A	N/A

63. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	N/A	N/A	N/A	N/A	N/A
(2) Total Derailed	N/A	N/A	N/A	N/A	N/A

64. Equipment Damage This Consist N/A

65. Track, Signal, Way, & Structure Damage N/A

66. Primary Cause Code N/A

67. Contributing Cause Code N/A

Number of Crew Members

68. Engineer/ Operators	69. Firemen	70. Conductors	71. Brakemen
N/A	N/A	N/A	N/A

Length of Time on Duty

72. Engineer/Operator Hrs N/A Mi N/A

73. Conductor Hrs N/A Mi N/A

Casualties to:	74. Railroad Employees	75. Train Passengers	76. Other
Fatal	N/A	N/A	N/A
Nonfatal	N/A	N/A	N/A

77. EOT Device? 1. Yes 2. No N/A

78. Was EOT Device Properly Armed? 1. Yes 2. No N/A

79. Caboose Occupied by Crew? 1. Yes 2. No N/A

OPERATING TRAIN #3

80. Type of Equipment Consist *(single entry)*
1. Freight train
2. Passenger train
3. Commuter train
4. Work train
5. Single car
6. Cut of cars
7. Yard/switching
8. Light loco(s).
9. Maint./inspect.car
A. Spec. MoW Equip.
Code N/A

81. Was Equipment Attended? 1. Yes 2. No Code N/A

82. Train Number/Symbol N/A

83. Speed *(recorded speed, if available)* Code
R - Recorded
E - Estimated N/A MPH N/A

84. Trailing Tons *(gross tonnage, excluding power units)* N/A

85. Method(s) of Operation *(enter code(s) that apply)*
a. ATCS
b. Auto train control
c. Auto train stop
d. Cab
e. Traffic
f. Interlocking
g. Automatic block
h. Current of traffic
i. Time table/train orders
j.Track warrant control
k. Direct traffic control
l.Yard limits
m.Special instructions
n. Other than main track
o. Positive train control
p. Other *(Specify in narrative)*
Code(s) N/A N/A N/A N/A N/A

85a. Remotely Controlled Locomotive?
0 = Not a remotely controlled
1 = Remote control portable
2 = Remote control tower
3 = Remote control transmitter - more than one remote control transmitter N/A

86. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	N/A	N/A	N/A
(2) Causing *(if mechanical cause reported)*	N/A	N/A	N/A

87. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
N/A	N/A

88. Was this consist transporting passengers? (Y/N) N/A

89. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote
(1) Total in Train	N/A	N/A	N/A	N/A	N/A
(2) Total Derailed	N/A	N/A	N/A	N/A	N/A

90. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	N/A	N/A	N/A	N/A	N/A
(2) Total Derailed	N/A	N/A	N/A	N/A	N/A

91. Equipment Damage This Consist N/A

92. Track, Signal, Way, & Structure Damage N/A

93. Primary Cause Code N/A

94. Contributing Cause Code N/A

Number of Crew Members

95. Engineer/ Operators	96. Firemen	97. Conductors	98. Brakemen
N/A	N/A	N/A	N/A

Length of Time on Duty

99. Engineer/Operator Hrs N/A Mi N/A

100. Conductor Hrs N/A Mi N/A

Casualties to:	101. Railroad Employees	102. Train	103. Other
Fatal	N/A	N/A	N/A
Nonfatal	N/A	N/A	N/A

104. EOT 1. Yes 2. No N/A

105. Was EOT Device Properly 1. Yes 2. No N/A

106. Caboose Occupied by Crew? 1. Yes 2. No N/A

Highway User Involved

107. Code A
A. Auto B. Truck C. Truck-Trailer. D. Pick-Up Truck E. Van F. Bus G. School Bus H. Motorcycle J. Other Motor Vehicle K. Pedestrian M. Other *(spec. in narrative)*

108. Vehicle Speed *(est. MPH at impact)* 25

109. *geographical)* Code 1
1.North 2.South 3.East 4.West

Rail Equipment Involved

111. Equipment Code 2
1.Train *(units pulling)*
2.Train *(units pushing)*
3.Train *(standing)*
4.Car(s) *(moving)*
5.Car(s) *(standing)*
6.Light Loco(s) *(moving)*
7.Light(s) *(standing)*
8.Other *(specify in narrative)*

112. Position of Car Unit in 1

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110. Position	Code	113. Circumstance	Code
1.Stalled on Crossing 2.Stopped on Crossing 3.Moving Over Crossing 4. Trapped	3	1. Rail Equipment Struck Highway User 2. Rail Equipment Struck by Highway User	1
114a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway User 2. Rail Equipment 3. Both 4. Neither	4	114b. Was there a hazardous materials release 1. Highway User 2. Rail Equipment 3. Both 4. Neither	4

114c. State here the name and quantity of the hazardous materials released, if any.
N/A

115. Type Crossing Warning	1.Gates 2.Cantilever FLS 3.Standard FLS	4.Wig Wags 5.Hwy. traffic signals 6.Audible	7.Crossbucks 8.Stop signs 9.Watchman	10.Flagged by crew 11.Other *(spec. in narr.)* 12.None	116. Signaled Crossing *(See instructions for codes)* Code	117. Whistle 1. Yes 2. No 3. Unknown Code
Code(s)	03	06	07	N/A N/A N/A N/A	01	2

118. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach	Code	119. Crossing Warning with Highway Signals 1. Yes 2. No 3. Unknown	Code	120. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown	Code
	1		2		2

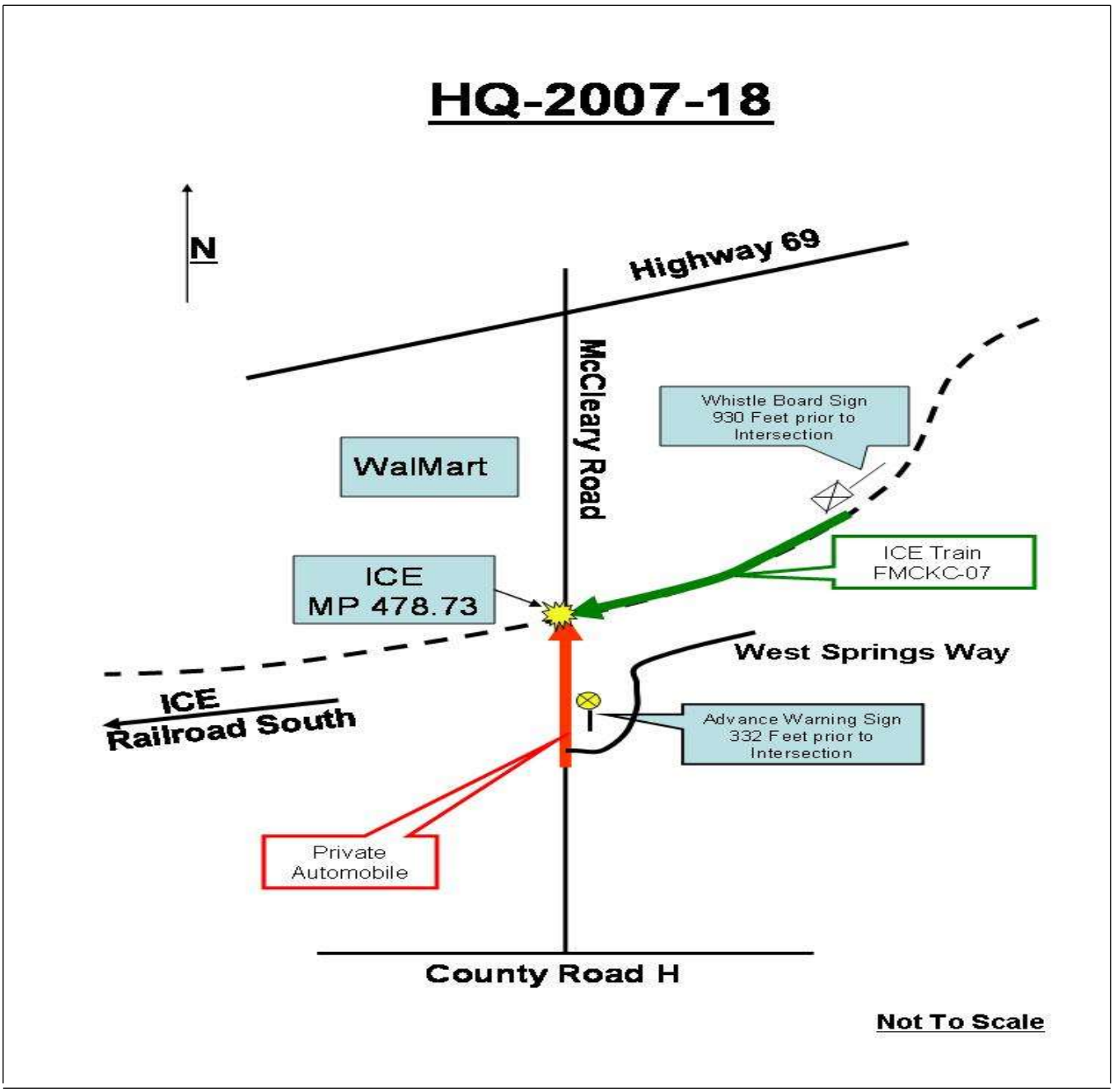
121. Age	122. Driver's Gender 1. Male 2. Female	Code	123. Driver Drove Behind or in Front of and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown	Code	124. Driver 1. Drove around or thru the Gate 2. Stopped and then Proceeded 3. Did not Stop 4. Stopped on Crossing 5. Other *(specify in narrative)*	Code
18		2		2		3

125. Driver Passed Highway Vehicle 1. Yes 2. No 3. Unknown	Code	126. View of Track Obscured by *(primary obstruction)* 1. Permanent Structure 2. Standing Railroad Equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicle 7. Other *(specify in narrative)* 8. Not obstructed	Code
	2		8

Casualties to:	Killed	Injured	127. Driver 1. Killed 2.Injured 3. Uninjured	Code	128. Was Driver in the Vehicle? 1. Yes 2. No	Code
				1		1
129. Highway-Rail Crossing Users	3	0	130. Highway Vehicle Property Damage *(est. dollar damage)*	3000	131. Total Number of Highway-Rail Crossing Users *(include driver)*	3

132. Locomotive Auxiliary Lights? 1. Yes 2. No	Code	133. Locomotive Auxiliary Lights Operational? 1. Yes 2. No	Code
	1		1
134. Locomotive Headlight Illuminated? 1. Yes 2. No	Code	135. Locomotive Audible Warning Sounded? 1. Yes 2. No	Code
	1		1

136. DRAW A SKETCH OF ACCIDENT AREA INCLUDING ALL TRACKS, SIGNALS, SWITCHES, STRUCTURES, OBJECTS, ETC., INVOLVED.



137. SYNOPSIS OF THE ACCIDENT

On April 8, 2007, at 5:01 p.m., c.s.t., southbound Iowa Chicago and Eastern Railroad Company (ICE) Train Symbol FMCKC-07, operating on ICE Track No. 2 of the Kansas City Subdivision, collided with a northbound private automobile. The location of the accident is at the McCleary Road highway-rail grade crossing intersection, milepost (MP) 478.73, DOT No. 375434Y, in Excelsior Springs, Missouri. McCleary Road is located in the southwest corner of the corporate limits of Excelsior Springs.

The conductor (Engineer No. 1) made an emergency application of the train air brakes just prior to the collision while traveling at 38 mph, timetable authorized 40 mph.

There was no rail equipment derailed, no hazardous material released and no evacuation ordered. The damage to Track, Signal, Way and Structure is $2,438 with no rail equipment damage. The private automobile was destroyed as a result of the collision, with an estimated value of $3,000. The three occupants of the automobile were fatally injured as a result of the collision.

At the time of the accident, it was daylight, and the weather was sunny with a temperature of 42 degrees Fahrenheit.

The probable cause of this accident was the failure of the motor vehicle operator to yield at the highway-rail intersection.

138. NARRATIVE

Circumstances Prior to the Accident

ICE Train Symbol FMCKC-07

The assigned loaded grain consisted of four head-end locomotives (Locomotive Nos. DME 6052, ICE 6448, ICE 6405 and DME 6061), 100 loads, no empties, and was 6,244 feet in length, with 12,905 trailing gross tons. It originated in Jackson, Minnesota, where it received a Class 1 Brake Test-Initial Terminal and was en route to Kansas City, Missouri. The train departed Ottumwa, Iowa, at 11:10 a.m., April 8, en route to Kansas City, Missouri. This was a run-through train with minimal delay times for crew member changes.

The train crew consisted of two locomotive engineers. They reported for duty on April 8 at 10:45 a.m., in Ottumwa. Kansas City is the home terminal for both crew members. Both crew members had received more than the statutory off-duty period prior to reporting for duty. Engineer No. 2 was operating the train at the time of incident, having been employed for 3 years and was promoted to engineer in 2005. The other engineer (No. 1) was acting in the capacity of a conductor at the time of incident, having been employed for 10 years and was promoted to engineer in 2000.

When this train departed Ottumwa, Engineer No. 1 was operating the train. At Laredo, Missouri, MP 405.2, the engineers changed position and Engineer No. 2 assumed the operating controls of the train. As this southbound train approached the accident area, locomotive Engineer No. 2 (engineer) was seated at the controls on the right (west) side of the lead/controlling locomotive. The Engineer No. 1 (conductor) was seated on the left (east) side of the cab of the lead/controlling locomotive.

Approaching the accident area from the north beginning at MP 477.0, the railroad track structure in succession is:

- tangent for 806 feet
- begin 3-degree right-hand curve for 2,740 feet
- tangent for 460 feet

- begin 3-degree left-hand curve for 1,274 feet to MP 478.0
- continue curve for another 1,666 feet (Total distance of curve - 2,940 feet)
- tangent for 340 feet
- begin 3-degree right-hand curve for 1,900 feet to McCleary Road, MP 478.73
- continue curve for another 433 feet (Total distance of curve - 2,330 feet)
- tangent for 770 feet
- begin 3-degree right-hand curve for 174 feet to MP 479.0
- continue curve for another 466 feet (Total distance for curve - 640 feet)
- tangent for 1,020 feet
- begin 2-degree 30-minute, left-hand curve for 780 feet
- tangent for 2,880 feet
- begin 3-degree, left-hand curve for 68 feet to MP 480.0

The trackage from MP 477.0 to MP 480.0 has a consistent 0.75 percent descending grade.

The trackage through the area of the collision had been inspected on Friday, April 6, by the ICE track inspector headquartered in Chillicothe, Missouri. No defective conditions were noted. The last time major track maintenance was accomplished in this area was several years ago.

The railroad timetable direction of the train was south; the geographical direction was southwest. Timetable directions are used throughout this report.

Private Automobile

The driver and two vehicle passengers had been at a family gathering south of the accident area and where en route to the Wal-Mart store located north of the accident area.

The driver was a 19-year-old female from Cameron, Missouri, who was not wearing her seatbelt. The left front seat occupant was a 14-year-old female from Liberty, Missouri, who was wearing her seatbelt. The left rear seat occupant was a 19-year-old female from Liberty, who was also wearing her seatbelt.

The vehicle was a red 1997 Chevrolet, two-door model Cavalier, which had recently been purchased by the driver and was being operated on a temporary State of Missouri license tag. This would also indicate that the vehicle had received and passed a mechanical inspection prior to the issuance of the temporary license tag, a state requirement. These tags are issued for a 30-day period only to allow the owner time to secure a permanent license plate.

Approaching the accident area from the south beginning at a point approximately 1,000 feet from the highway -rail crossing, the roadway structure is:

- tangent for the entire 1,000 feet
- descending grade for 626.8 feet to West Springs Way Road
- ascending grade of 4 degrees, 51 minutes for 373.2 feet to the crossing apron
- an advanced warning sign is located 332 feet south of the crossing on the right side of the roadway
- there is no preview obstruction of the crossing environment for the driver
- there is no roadway surface advance warning markings

When the private automobile approached the railroad tracks from the south, there was no apparent attempt to accelerate and beat the train. The driver kept a constant speed as observed by several witnesses. There is no evidence the driver attempted to stop prior to the collision, as there were no tire skid marks on the pavement approaching the crossing.

The Accident

The ICE System Timetable No. 2, dated April 3, 2005, identifies the Kansas City Subdivision extending from Nahant, Iowa, MP 195.7, southward to Kansas City, Missouri, MP 499.2, a distance of 303.5 miles. The method of operation on this subdivision is by signal indication of a Traffic Control System (TCS) or Track Warrant Control (TWC), supplemented by timetable and special instructions with the maximum timetable authorized speed of 60 mph. This is not an Amtrak route.

In the vicinity of the accident, the ICE operates over a single main track identified as Track No. 2 from MP 456.7 to MP 481.5, a distance of 24.8 miles. The Union Pacific Railroad Company (UP) operates on Track No. 1, which is physically located approximately 2 miles to the northwest. The method of operation is by signal indication of the TCS, which is remotely controlled by an ICE train dispatcher located at the Truman Draw Bridge in Kansas City, Missouri, at MP 497.0. This TCS extends southward from Laredo, MP 405.2 to Kansas City, MP 499.2, a distance of 76.5 miles. The main track structure in the vicinity of the accident consists of 115-lb continuous-welded rail (CWR) mounted on wooden crossties.

The ICE timetable indicates a permanent maximum authorized speed of 40 mph from MP 467.0 to 494.0 for Track No. 2.

McCleary Road, a Clay County roadway, is located in the southwest corner of Excelsior Springs. This roadway extends southward from State Highway 69 to County Road "H," a distance of 0.75 miles, with a posted speed limit of 25 mph. The highway-rail grade crossing intersection is approximately 0.3 miles south of State Highway 69 and within the corporate limits of Excelsior Springs. The roadway is approximately 24 feet wide, with an asphalt surface on both the north and south approaches; the crossing surface is constructed of concrete panels with concrete aprons.

The highway-rail grade crossing warning system installation at this crossing consists of one signal mast on each side of the crossing with conventional back-to-back flashing lights, electronic horns, and gates for the main track. The back-to-back, 12-inch flashing lights on each mast are Safetran Model FLX-12 retro-fitted with LED inserts.

The highway-rail grade crossing system (HGCS) train detection equipment on main Track No. 2 consists of a Harmon Industries HXP-1 Processor, with approach circuits extending 2,199 feet railroad north and south of the crossing, providing approximately 20 seconds warning time at 50 mph. The island circuit is 124 feet in length and centered on the roadway.

This HGCS was last performance tested on March 20, 2006, with the recorded results indicating that the system was operating as designed and intended.

The Missouri State Highway Patrol assisted the Excelsior Springs Police Department survey and document the roadway and track structure topography of the roadway approaches to the accident site.

ICE Train Symbol FMCKC-07

This train was being operated at an increasing speed from 25 mph to 38 mph while approaching the accident area. A 25-mph slow order was in place from MP 475.4 to MP 476.4 account of the rough crossing surface at Dunbar Road, MP 476.0, and rail irregularities. The speeds were recorded by the event recorders of all the locomotives.

Approaching McCleary Road, the train crew did not observe the incident vehicle approaching from the left side. The train crew's preview of an approaching vehicle in the left front quadrant is somewhat obscured account of the roadway's ascending grade and the low profile of the incident vehicle. The train crew had been proceeding via a "Green" Proceed signal aspect displayed at MP 476.4, Excelsior Springs. The engineer was utilizing the locomotive's dynamic brakes to control the speed of the train and not exceed the posted 40 mph speed limit.

The conductor observed the incident vehicle cross in front of the locomotive immediately prior to the collision and made an emergency application of the train air brakes. The engineer did not observe the incident vehicle and realized that a collision had occurred when debris began impacting the locomotive's windshield. The train continued southward for another 2,474 feet after impacting the passenger side of the automobile stopping at MP 479.24. The lead/controlling locomotive engaged the automobile between the passenger front door and front wheel well area. The automobile traveled with the train consist until it stopped while remaining in the upright position during this period of time.

When the train consist stopped its forward movement, the conductor exited the lead locomotive and began walking back to McCleary Road to check on the train and direct emergency responders. The engineer

immediately notified the ICE train dispatcher via the locomotive radio of the collision. Then he exited the locomotive to check on the status of the automobile and its occupants, and determined that the occupants were dead.

Private Automobile

This vehicle was proceeding north on McCleary Road at an estimated 25 mph, the posted speed limit. As the vehicle approached the crossing, there was no attempt by the driver to avoid the impending collision. The actions of the driver where observed by several witness's as reported by the Excelsior Springs Police Department investigating officer.

When the automobile occupants were examined by emergency response personnel at the stopped accident scene, the following was observed:

- Pink fuzzy dice fell on the ground when the driver's door was opened
- A pink tassel and a string of artificial flowers were lying on the ground next to the vehicle
- A blue bandana was hanging from the front seat passenger sun visor

The investigation law enforcement officials determined that these items could have obscured the driver's forward and right front peripheral vision.

Analysis and Conclusions

Analysis

The ICE downloaded the event recorders from the lead/controlling and the three trailing locomotives at the accident site. Upon review, no exceptions were noted to locomotive, train performance, or train handling prior to the accident by either crew member.

ICE Train Symbol FMCKC-07 had received a second Class 1 Brake Test-Initial Terminal prior to departing Jackson. The incident train crew did not perform an air brake test prior to departing Ottumwa and did not note any mechanical exceptions prior to departure. The inbound train crew informed the incident train crew that they had not noted any mechanical exceptions prior to there arrival in Ottumwa. The incident train crew indicated that they had no issues with the performance of the train prior to the accident site.

The ICE manager of operating practices (MOP) from Kansas City, performed a cursory mechanical inspection of the entire consist while stopped at MP 479.24, following the accident. This inspection revealed no non-compliant operational issues with the consist.

The entire train consist was moved to the Joint Agency Facility in Kansas City, that same day/evening with a relief train crew. An additional mechanical inspection of the entire consist was performed on April 9, at 12:41 p.m., at the Joint Agency Facility by the manager of locomotives. The following items were tested:

- Air Brake Test - Checked OK
- Locomotive Horn - Checked OK
- Locomotive Bell - Checked OK
- Locomotive Head Light - Checked OK
- Locomotive Ditch Light - Checked OK
- Locomotive Sanders - Checked OK

The performance of the wayside HGCS was tested on April 9, in the presence of the FRA Accident Inspector-in-Charge (IIC) and FRA Regional Assistant Grade Crossing Safety and Trespass Prevention Manager. This testing was performed by the ICE signal supervisor headquartered in Ottumwa and the local signal maintainers. The results of this HGCS testing confirmed that the wayside system at the accident site was operating as designed and intended.

The track structure in the vicinity of the accident had been previously inspected on April 6, by the ICE track inspector headquartered in Chillicothe, with no exceptions noted.

There was no formal investigation conducted based on the ICE account of the information and witness

statements gathered at the accident site.

The minor track structure damage resulting from the accident was repaired the next day with no rail service interruptions.

The ICE did not collect toxicological samples from the train crew because the incident did not meet FRA's Post-Accident Toxicological Testing requirements under Title 49 Code of Federal Regulations (CFR), Part 219 Subpart C.

Analysis:

FRA obtained fatigue related information, for the 10-day period preceding this incident including the 10-day work history (on duty/off duty cycles) for all of the employees involved.

Conclusion:

Upon analysis of that information FRA concluded fatigue was not probable for any of the employees.

Conclusions

The wayside HGCS system was operating as intended and within the ICE and FRA regulatory guidelines. The incident train's locomotives and consist mechanical functions were operating as intended and within the ICE's regulatory guidelines. The incident train crew did not indicate any problems with the train or its performance, nor with the movement authority prior to the accident. A review of the incident train crew's recent efficiency testing results indicates compliance with ICE's General Code of Operating Rules (GCOR) and company safety rules.

The incident private automobile has received and passed a mechanical inspection within 3 weeks prior to the accident.

A post-accident toxicological test of the private automobile driver provided negative results.

The on-site law enforcement officials did not cite the train crew for any moving violations.

The roadway approach did have a properly displayed advance warning sign for the highway-rail grade crossing, as required by Manual on Uniform Traffic Control Devices (MUTCD) and Missouri Department of Transportation (MoDOT) standards for Highway-Rail Grade Crossings.

The highway-rail grade crossing environment was clearly visible to the approaching incident's private automobile driver. The driver had sufficient time and distance to stop prior to the collision, as annotated within the Excelsior Springs Police Department "Inclusive Case Report."

Probable Cause and Contributing Factors

The contributing factor involved in this accident was the automobile driver's possible obscured peripheral vision account of items hanging from the rear view mirror and wrapped around the right front seat passenger's sun visor.

An investigation by the Federal Railroad Administration found that the accident occurred because the driver of the private automobile did not yield the right-of-way to the southbound ICE train at the McCleary Road intersection.